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University of California  
College of Agriculture  
Agricultural Experiment Station  
Berkeley, California

SEASONAL LABOR NEEDS FOR CALIFORNIA CROPS

SACRAMENTO COUNTY

(Excluding Delta Lands)

Progress Report No. 34

by

R. L. Adams

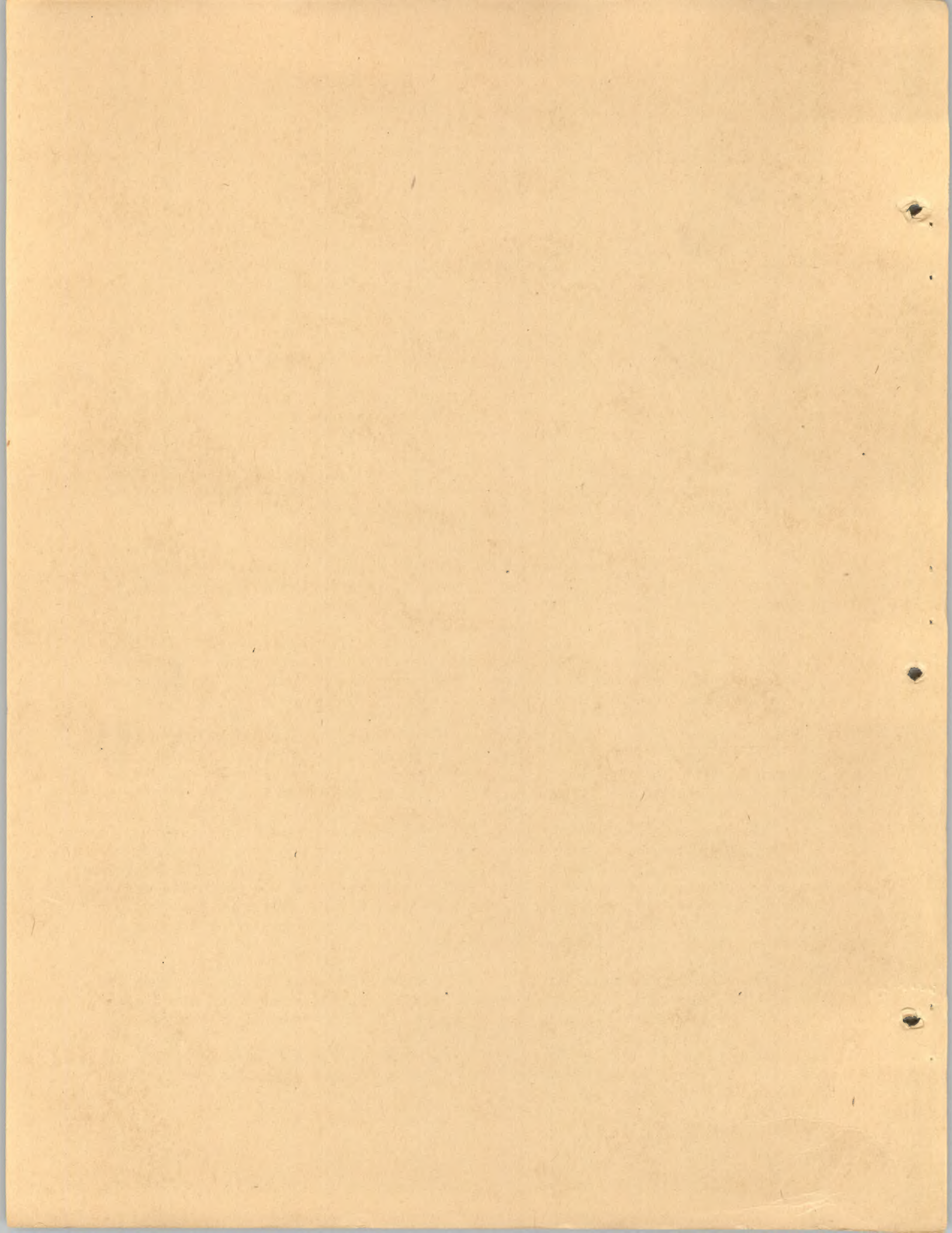
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November, 1936

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(Farm Labor Survey -- July-December, 1936)

Progress Report No. 34

Seasonal Labor Needs for California Crops

Sacramento County  
(Excluding Delta Lands)

Scope of Presentation.-- The following considerations govern the presentation of this progress report:

1. The data are confined to the area indicated above.
2. The data are confined solely to crops, livestock needs being ignored.
3. The findings apply only to occasional or seasonal labor requirements as distinguished from labor contributed by farm operators and by workers employed on a year-round or regular basis of employment.
4. Attention is concentrated upon workers required for hand tasks -- planting, thinning, weeding, hoeing, and harvesting -- without including teamsters, tractor drivers, irrigators, and shed packers of vegetables or fruits.
5. The presentation includes the so-called migratory, transient, or roving workers which comprise an important source of help needed in connection with certain tasks and at "peak" times which seasonally arise in connection with many field, truck, and fruit crops commercially produced in California.
6. This report is confined to California's need for seasonal agricultural workers because of the more pressing problems liable to arise in connection therewith. A later study is planned which will deal with other kinds of labor involved in the production of California's many crops.

Brief Description of the Area.-- Sacramento County is one of the central counties of California, its southwestern point being about 36 miles northeast of San Francisco. It lies east of the Sacramento River, and borders that river from its point of junction with the San Joaquin northward for about 55 miles to a point some 10 miles north of the city of Sacramento. Solano and Yolo counties lie across the river to the west. On the north it is joined by Sutter and Placer counties, and on the east it is separated from El Dorado and Amador counties by a line which runs through the foothills of the Sierra Nevada Mountains. On the south Dry Creek forms the boundary between Sacramento and San Joaquin counties from the foothills westward to its junction with the north fork of the Mokelumne River. The line then follows the north fork of the Mokelumne southward to the San Joaquin and along the San Joaquin River to its junction with the Sacramento.

A large part of the agricultural land of the county lies in the lowlands and islands of the river district south of Sacramento, generally known as the "Delta", and has been omitted from this report because the Delta is treated as a separate unit in Progress Report No. 59.

The county has an area of 629,120 acres, of which 374,318 acres are classified as available for crops by the 1935 Census. This is further classified as follows by the Census for the crop year 1934:



Seasonal Labor Needs for California Crops

Sacramento County  
(Excluding Delta Lands)

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1. The data are confined to the area indicated above.
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4. Attention is concentrated upon workers required for hand tasks -- planting, thinning, weeding, hoeing, and harvesting -- without including tractors, sprayers, drivers, irrigators, and shed packers or fruiters.
5. The presentation includes the so-called migratory, transient, or roving workers which comprise an important source of help needed in connection with certain tasks and at "peak" times which seasonally arise in connection with many field, truck, and fruit crops commercially produced in California.
6. This report is confined to California's need for seasonal agricultural workers because of the more pressing problems liable to arise in connection therewith. A later study is planned which will deal with other kinds of labor involved in the production of California's many crops.

Brief Description of the Area.-- Sacramento County is one of the central counties of California, its southwestern point being about 28 miles northeast of San Francisco. It lies east of the Sacramento River, and borders that river from its point of junction with the San Joaquin northwest for about 55 miles to a point some 10 miles north of the city of Sacramento. Saline and Yuba counties lie across the river to the west. On the north it is joined by Butte and Placer counties, and on the east it is separated from El Dorado and Amador counties by a line which runs through the foothills of the Sierra Nevada Mountains. On the south Dry Creek forms the boundary between Sacramento and San Joaquin counties from the foothills westward to its junction with the north fork of the Mokelumne River. The line then follows the north fork of the Mokelumne southeast to the San Joaquin and along the San Joaquin River to its junction with the Sacramento.

A large part of the agricultural land of the county lies in the lowlands and islands of the river district south of Sacramento, generally known as the "Delta," and has been omitted from this report because the Delta is treated as a separate unit in Progress Report No. 33. The county has an area of 623,180 acres, of which 374,318 acres are classified as available for crops by the 1935 Census. This is further classified as follows by the Census for the crop year 1934:



	Acreage
Crop land harvested	204,255
Crop failure	2,581
Crop land idle or fallow	49,645
Flowable pasture	117,837
Total	374,318

Note: This table is for the whole county, including delta lands, which are not considered in this report.

In general, the most intensively developed farm land of the county lies along the rivers; along the Sacramento River, both north and south of the city of Sacramento, and along the American and Cosumnes rivers which drain into it from the east. Some of the higher land near the rivers has also been put under irrigation, but most of it lies below 200 feet in elevation. The lower land bordering the American and Cosumnes rivers is a fine sandy loam 6 feet or more in depth. The higher land adjoining is mostly loam, of somewhat less depth. The American Basin, north of the junction of the Sacramento and American rivers, consists largely of clay with a considerable area of silt loam and fine sandy loam near the rivers.

Grain is produced over a large part of the slightly elevated rolling land between the eastern foothills and the Sacramento River, the soil being mostly a loam of moderate depth.

Crops, Acreage, and Production.-- The basis used in calculating occasional or seasonal need for labor other than that furnished by farm operators and regularly employed workers appears as table 1. This table does not include that portion of the county which lies in the Delta, since the Delta, including portions of five counties, has been considered as a separate unit in Progress Report No. 59. Due to lack of assembled data, acreage and production figures shown in table 1 are estimates based on information obtained from various sources. However, they are believed to represent conditions with a fair degree of accuracy.

TABLE 1

Basis for Calculating Seasonal Labor Needs  
Sacramento County (Excluding Delta)

Crop	Acreage	Production
Field crops:*		
Alfalfa	10,000	50,000 tons
Beans	10,000	--
Grain -- wheat, barley, oats	60,000	--
Hay -- other than alfalfa	13,500	17,800 tons
Rice	2,832	255,294 bushels of 45 pounds
Hops	2,005	17,454 bales of 190 pounds †
Vegetable crops:		
Beans ‡-- spring	150	--
fall	50	--
Cabbage ‡	150	--
Peas	140 6	21,000 hampers (of 1 bushel each)
Spinach	1,000	4,500 tons
Tomatoes -- canning	5,100	40,800 tons

Table continued on next page.



374,319  
 117,037  
 43,463  
 2,181  
 304,285  
 1,000,000

Total  
 Flowable pasture  
 Crop land idle or fallow  
 Crop failure  
 Crop land harvested

Note: This table is for the whole county, including delta lands, which are not considered in this report.

In general, the most intensively developed farm land of the county lies along the rivers; along the Sacramento River, both north and south of the city of Sacramento, and along the American and Cosumnes rivers which drain into it from the east. Some of the higher land near the rivers has also been put under irrigation, but most of it lies below 200 feet in elevation. The lower land bordering the American and Cosumnes rivers is a fine sandy loam 8 feet or more in depth. The higher land adjoining is mostly loam, of somewhat less depth. The American Basin, north of the junction of the Sacramento and American rivers, consists largely of clay with a considerable area of silt loam and fine sandy loam near the rivers.

Grain is produced over a large part of the slightly elevated rolling land between the eastern foothills and the Sacramento River, the soil being chiefly a loam of moderate depth.

Crops, Acreage, and Production.--The basis used in calculating seasonal or seasonal need for labor other than that furnished by farm operators and regularly employed workers appears as table 1. This table does not include that portion of the county which lies in the Delta, since the Delta, including portions of two counties, has been considered as a separate unit in previous report No. 63. Due to lack of assembled data, acreage and production figures shown in table 1 are estimates based on information obtained from various sources. However, they are believed to represent conditions with a fair degree of accuracy.

TABLE 1  
 Basis for Calculating Seasonal Labor Needs  
 Sacramento County (Including Delta)

Crop	Acreage	Production
Field crops:		
Alfalfa	10,000	50,000 tons
Beans	10,000	--
Grain -- wheat, barley, oats	80,000	--
Hay -- other than alfalfa	15,000	15,000 tons
Rice	2,832	25,294 bushels of 48 pounds
Hops	2,000	17,484 bushels of 120 pounds
Vegetable crops:		
Beans -- spring	180	--
Peas	180	--
Cabbage	180	--
Spinach	140	21,000 bushels (of 1 bushel each)
Tomatoes -- canning	1,000	5,000 tons
	2,100	40,800 tons

Table continued on next page.



Table 1 continued.

Crop	Acreage	Production
Tomatoes -- summer	100	10,400 lugs to San Francisco by truck
fall	300	52,800 lugs by rail
Fruit and nut crops: ¶		
Almonds	2,167	271 tons
Apples ‡	142	--
Apricots	513	180 tons canned or shipped
Cherries	646	75 tons fresh weight: dried†
Figs -- Kadota ‡	55	120 tons canning varieties
Figs -- other than Kadota	228	150 tons shipping varieties
		6 cars to San Francisco by truck = 7,200 crates of 12 pounds
Grapes -- raisin varieties	439	
table varieties	10,678	862,875 lugs shipped
wine varieties	3,590	15,000 tons for juice
Grapefruit ‡	46	--
Lemons ‡	100	--
Oranges -- Navel ‡	1,297	--
Olives	2,269	110 tons shipped
		175 tons pickled
		200 tons pressed for oil
Peaches -- clingstone	2,071	4,240 tons fresh
		85 tons fresh weight: dried†
Peaches -- freestone ‡	946	15 tons fresh weight: dried
		35 tons shipped
Pears -- Bartlett	920	4,600 tons
other varieties ‡	250	--
Persimmons ‡	20	--
Plums	2,029	1,415 tons (mostly shipped)
Prunes	2,816	2,800 tons dry weight ‡
Walnuts	805	393,250 pounds, including 17 per cent culls (estimated)
Strawberries	1,150	800,000 crates of 12 baskets

\*Field crop acreages based largely on 1935 Census.

†Drying ratios estimated to be as follows:

Apricots 5.5 -- 1  
Peaches 5.5 -- 1

Prunes 2.25 -- 1  
Hops 4 -- 1

‡Use of seasonal labor inconsequential on these crops -- hence ignored.

§Acreage in green peas increased to 800 in 1936, but average yield decreased -- about 400 pickers required in 1936.

¶Fruit and nut crop acreages based on California Cooperative Crop Reporting Service. Acreage estimates -- California fruit and nut crops. Spec. Pub. 117. 1932.

|| Pear acreage is estimate for 1935.



Table 1 continued.

Crop	Production	Value
Strawberries	800,000 crates of 15 baskets cent value (estimated) 383,380 pounds, including 14 per cent extra (mostly shipped)	1,160
Walnuts	---	808
Pistachios	---	2,018
Pears -- Bartlett	---	2,028
Pears -- other varieties	---	20
Pears -- Bartlett	4,800 tons	920
Pears -- other varieties	35 tons shipped	940
Peaches --clingstone	18 tons fresh weight 88 tons fresh weight 300 tons pressed for oil	2,071
Olives	178 tons picked 110 tons shipped	2,289
Oranges -- Navel	---	1,237
Lemons	---	100
Grapefruit	---	40
Wine varieties	---	2,580
Table varieties	18,000 tons for juice	10,678
Grapes -- table varieties	883,875 bags shipped	433
Pigs -- other than Kabots	12 pounds	328
Pigs -- Kabots	6 cars to San Francisco by truck - 7,300 crates of	55
Cherries	180 tons shipping varieties 120 tons eating varieties 75 tons fresh weight dried	648
Almonds	---	2,167
Fruit and nut crops	271 tons	---
Apples	100 tons canned or shipped	142
Tomatoes -- summer	62,400 bags by rail 10,400 bags to San Francisco by truck	300
Tomatoes -- winter	---	120

\*Field crop acreages based largely on 1935 Census.

†Frying ratios estimated to be as follows:

Peaches 0.8 -- 1  
Apples 0.8 -- 1  
Pears 0.8 -- 1  
Hops 4 -- 1  
Lemons 2.5 -- 1

‡Use of seasonal labor inconsequential on these crops -- hence ignored.

§Average in green beans increased to 800 in 1936, but average yield decreased -- about 400 baskets required in 1935.

¶Fruit and nut crop acreages based on California Cooperative Crop Reporting Service. Acreage estimates -- California fruit and nut crops. Spec. Pub. 117, 1935.

‡Fruit acreage is estimate for 1935.



Operations Requiring Use of Seasonal Labor and Time of Need.--- Farm operations requiring the use of seasonal labor for the various crops raised in Sacramento County (excluding that portion of the county lying in the Delta) are indicated in table 2. This tabulation does not include the employing of shed workers needed to wash, pack, and prepare various commodities for shipping and marketing.

TABLE 2

Operations Requiring Use of Seasonal Labor and Time of Need by Crops  
Sacramento County (Excluding Delta)

Crop	Operation	Time of need by months	Per cent of work done by seasonal help	Output per man-day
Field crops:				
Alfalfa	Mowing with teams -- 50 per cent of acreage	April 15-30 -- 1/2 of acreage	50	7.5 acres
	Mowing with tractor -- 50 per cent of acreage	April 15-30 -- 1/2 of acreage	50	20 acres*
	Raking	May -- September, inclusive, -- all of acreage each month	50	15 acres
	Shocking -- with rakes	October 1-15 -- 1/2 of acreage	50	30 acres
	Stacking	May -- October, inclusive, -- 1/6 of job each month	50	10 tons
	Baling -- 90 per cent of crop	May -- October, inclusive, -- 1/6 of job each month	100	8 tons
Beans	Hoeing (1 time)-- 50 per cent of acreage	July -- all of job	100	2 acres
	Piling	September 1-30 -- 70 per cent of acreage October 1-31 -- 30 per cent of acreage	100	1 acre
	Threshing by "pick-up"	September 1-30 -- 15 per cent of acreage October 1-31 -- 75 per cent of acreage November 1-15 -- 10 per cent of acreage	50	4 acres
Grain	Harvesting with combine	June 1-30 -- 50 per cent of acreage July 1-31 -- 50 per cent of acreage	60	7 acres

Table continued on next page.



Operations Requiring Use of Seasonal Labor and Time of Need for Farm Operations  
 requiring the use of seasonal labor for the various crops raised in Sacramento  
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 Sacramento County (Excluding Delta)

Crop	Operation	Time of need by months	Per cent of work done by seasonal help	Output per acre-day
Field crops Alfalfa	Mowing with teams -- 50 per cent of acreage	April 15-30 -- 1/2 of acreage	50	7.5 acres
	Mowing with tractor -- 50 per cent of acreage	April 15-30 -- 1/2 of acreage	50	20 acres*
	Raking	May -- September, inclusive -- all of acreage each month	50	15 acres
	Shocking -- with rakes	October 1-15 -- 1/2 of acreage	50	30 acres
	Stacking	May -- October, inclusive -- 1/8 of job each month	50	10 tons
	Baling -- 50 per cent of crop	May -- October, inclusive -- 1/8 of job each month	100	8 tons
	Baling (1 time) -- 50 per cent of acreage	July -- all of job	100	2 acres
Beans	Piling	September 1-30 -- 70 per cent of acreage October 1-31 -- 30 per cent of acreage	100	1 acre
	Threshing by "pick-up"	September 1-30 -- 15 per cent of acreage October 1-31 -- 75 per cent of acreage November 1-15 -- 10 per cent of acreage	50	4 acres
	Harvesting with combine	June 1-30 -- 50 per cent of acreage July 1-31 -- 50 per cent of acreage	50	7 acres

Table continued on next page.



Table 2 continued.

Crop	Operation	Time of need by months	Per cent of work done by seasonal help	Output per man-day
Field crops: (cont.)				
Hay -- other than alfalfa	Mowing Raking Shocking	May 1-31 -- all of acreage May 1-31 -- all of acreage May 1-31 -- all of acreage	50	7.5 acres 15.0 acres 30 acres
Rice	Cutting with "swather"	September 15-30 -- 1/3 of acreage October 1-31 -- 2/3 of acreage	50	10 acres
	Threshing with "pick- up" +	September 15-30 -- 20 per cent of acreage October 1-31 -- 80 per cent of acreage	50	4.6 acres or 180 sacks
	Picking up sacks and hauling from field	September 15-30 -- 20 per cent of crop October 1-31 -- 80 per cent of crop	100	500 sacks
Hops	Pruning, stringing, etc.	March 1-31 -- 1/3 of job April 1-30 -- 2/3 of job	70	Total -- 6 man-days per acre
	Training vines -- 3 times	May 7-31 -- 2/3 of job June 1-15 -- 1/3 of job	70	Total -- 6 man-days per acre = 0.5 acre per day
	Picking Drying	August 7-31 -- all of crop August 7-31 -- all of crop	100 50	200 pounds 2,800 pounds (green weight)
	Baling	September 1-7 -- all of crop	60	15 bales of 200 pounds + (dry weight)
Vegetable crops:				
Peas -- green	Hoeing -- average 1 time	February -- 50 per cent of acreage March -- 50 per cent of acreage	100	0.66 acre
Spinach	Picking Hoeing	May 10-31 -- all of crop January 1-31 -- 50 per cent of acreage February 1-28 -- 50 per cent of acreage	100 100	10 hampers 0.75 acre

Table continued on next page.



DATE	DESCRIPTION	AMOUNT	CHECK NO.	BANK
1-1-20	Payroll - Jan 1	100.00		Bank of America
1-2-20	Payroll - Jan 2	100.00		Bank of America
1-3-20	Payroll - Jan 3	100.00		Bank of America
1-4-20	Payroll - Jan 4	100.00		Bank of America
1-5-20	Payroll - Jan 5	100.00		Bank of America
1-6-20	Payroll - Jan 6	100.00		Bank of America
1-7-20	Payroll - Jan 7	100.00		Bank of America
1-8-20	Payroll - Jan 8	100.00		Bank of America
1-9-20	Payroll - Jan 9	100.00		Bank of America
1-10-20	Payroll - Jan 10	100.00		Bank of America
1-11-20	Payroll - Jan 11	100.00		Bank of America
1-12-20	Payroll - Jan 12	100.00		Bank of America
1-13-20	Payroll - Jan 13	100.00		Bank of America
1-14-20	Payroll - Jan 14	100.00		Bank of America
1-15-20	Payroll - Jan 15	100.00		Bank of America
1-16-20	Payroll - Jan 16	100.00		Bank of America
1-17-20	Payroll - Jan 17	100.00		Bank of America
1-18-20	Payroll - Jan 18	100.00		Bank of America
1-19-20	Payroll - Jan 19	100.00		Bank of America
1-20-20	Payroll - Jan 20	100.00		Bank of America
1-21-20	Payroll - Jan 21	100.00		Bank of America
1-22-20	Payroll - Jan 22	100.00		Bank of America
1-23-20	Payroll - Jan 23	100.00		Bank of America
1-24-20	Payroll - Jan 24	100.00		Bank of America
1-25-20	Payroll - Jan 25	100.00		Bank of America
1-26-20	Payroll - Jan 26	100.00		Bank of America
1-27-20	Payroll - Jan 27	100.00		Bank of America
1-28-20	Payroll - Jan 28	100.00		Bank of America
1-29-20	Payroll - Jan 29	100.00		Bank of America
1-30-20	Payroll - Jan 30	100.00		Bank of America
1-31-20	Payroll - Jan 31	100.00		Bank of America



Table 2 continued.

Crop	Operation	Time of need by months	Per cent of work done by seasonal help	Output per man-day
Spinach (cont.)	Picking up and crating	March 15-31 -- 50 per cent of crop April 1-15 -- 50 per cent of crop	100	4 tons
Tomatoes	Transplanting (in beds)	February 15-28 -- 50 per cent of job March 1-15 -- 50 per cent of job	80	5,000 plants
	Planting by hand -- 50 per cent of acreage	April 15-30 -- 25 per cent of job May 1-15 -- 75 per cent of job	100	0.75 acre
	Planting by machine -- 50 per cent of acreage	April 15-30 -- 25 per cent of job May 1-15 -- 75 per cent of job	100	2.0 acres
	Replanting -- 10 per cent of plants	May 1-30 -- all of job	100	4 acres
	Hoeing -- average 2 times	May 20-31 -- 25 per cent of job June 1-30 -- 75 per cent of job	100	1.0 acre
	Picking for canning	August 15-31 -- 20 per cent of crop September 1-30 -- 40 per cent of crop October 1-31 -- 40 per cent of crop	100	2,000 pounds
	Picking for shipping	July -- 10 per cent of shipments August -- 11 per cent of shipments September -- 2 per cent of shipments October -- 75 per cent of shipments	100	45 packed lugs
Balance -- scattered and inconsequential.				
Fruit and nut crops: Almonds	Knocking	August 10-31 -- 25 per cent of crop September 1-30 -- 70 per cent of crop October 1-10 -- 5 per cent of crop	100	0.25 acre

Table continued on next page.



Date	Description	Amount	Balance	Total
	To Cash	100.00	100.00	100.00
	By Cash	50.00	50.00	50.00
	To Cash	25.00	25.00	25.00
	By Cash	12.50	12.50	12.50
	To Cash	6.25	6.25	6.25
	By Cash	3.12	3.12	3.12
	To Cash	1.56	1.56	1.56
	By Cash	0.78	0.78	0.78



Table 2 continued.

Crop	Operation	Time of need by months	Per cent of work done by seasonal help	Output per man-day
Almonds (cont.)	Hulling -- by machine <sup>¶</sup>	August 10-31 -- 25 per cent of crop September 1-30 -- 70 per cent of crop October 1-10 -- 5 per cent of crop	50	400 pounds in 8 hours
Apricots	Pruning	November -- 75 per cent of acreage December -- 25 per cent of acreage	100	0.25 acre
	Thinning <sup>¶</sup>	April 15-30 May 1-15	--	--
	Picking	June 15-30 -- 70 per cent of crop July 1-15 -- 30 per cent of crop	100	1,000 pounds
	Cutting for drying	June 15-30 -- 70 per cent of job July 1-15 -- 30 per cent of job	100	600 pounds (fresh weight)**
	Other dry-yard labor	June 15-30 -- 60 per cent of job July 1-20 -- 40 per cent of job	100	11 hours per fresh ton
Cherries	Picking -- canning varieties	May 24-31 -- 50 per cent of crop June 1-7 -- 50 per cent of crop	100	200 pounds
	Picking -- shipping varieties	May 1-31 -- 80 per cent of crop June 1-7 -- 20 per cent of crop	100	180 pounds
	Packing -- shipping varieties	May 1-31 -- 80 per cent of crop June 1-7 -- 20 per cent of crop	100	225 pounds
Figs -- other than Kadota	Picking	July -- 1,200 crates September -- 3,600 crates October -- 2,400 crates	100	15 crates (= 180 pounds)
Grapes	Pruning	January -- 1/3 of acreage February -- 1/3 of acreage March -- 1/3 of acreage	90	0.33 acre

Table continued on next page.



No.	Date	Description	Amount	Balance
1	Jan 1	To Balance	100.00	100.00
2	Jan 5	By Cash	25.00	75.00
3	Jan 10	To Cash	15.00	90.00
4	Jan 15	By Cash	10.00	80.00
5	Jan 20	To Cash	5.00	75.00
6	Jan 25	By Cash	5.00	70.00



Table 2 continued.

Crop	Operation	Time of need by months	Per cent of work done by seasonal help	Output per man-day
Grapes (cont.)	Hoeing and suckering	March -- 1/2 of acreage	90	Average 2.0 acres (varies greatly)
		April -- 1/2 of acreage		
	Sulfuring -- several times	May -- 1/3 of job	100	Totals about 1/2 day per acre for season
		June -- 1/3 of job		
		July -- 1/3 of job		
	Picking and packing in field for season	August 24-31 -- 3 per cent of shipments	100	12 lugs (of 31 pounds)
		September 1-30 -- 60 per cent of shipments		
		October 1-31 -- 36 per cent of shipments		
		November 1-15 -- 1 per cent of shipments		
		September 15-30 -- 30 per cent of crop	100	3,000 pounds
Olives	Picking for wineries (and for drying)	October 1-31 -- 40 per cent of crop		
		November 1-30 -- 30 per cent of crop		
	Picking for pickling	October 15-31 -- 1/3 of crop	100	275 pounds
		November 1-30 -- 2/3 of crop		
		December 1-31 -- 50 per cent of crop	100	400 pounds
		January 1-31 -- 50 per cent of crop		
Peaches -- clingstone	Pruning	December 1-31 -- 15 per cent of acreage	50	0.25 acre
		January 1-31 -- 35 per cent of acreage		
		February 1-28 -- 35 per cent of acreage		
		March 1-15 -- 15 per cent of acreage		
	Thinning	May 1-31 -- 50 per cent of acreage	100	0.2 acre
		June 15-30 -- 50 per cent of acreage		
	Picking	August 1-31 -- 60 per cent of crop	100	1 ton
		September 1-10 -- 40 per cent of crop		

Table continued on next page.



Date	Time	Description	Remarks	Total
1900	10:00	... ..	...	...
1900	11:00	... ..	...	...
1900	12:00	... ..	...	...
1900	13:00	... ..	...	...
1900	14:00	... ..	...	...
1900	15:00	... ..	...	...
1900	16:00	... ..	...	...
1900	17:00	... ..	...	...
1900	18:00	... ..	...	...
1900	19:00	... ..	...	...
1900	20:00	... ..	...	...
1900	21:00	... ..	...	...



Table 2 continued.

Crop	Operation	Time of need by months	Per cent of work done by seasonal help	Output per man-day
Peaches (cont.)	Cutting for drying	August 1-31 -- 60 per cent of job September 1-10 -- 40 per cent of job	100	600 pounds
	Other labor in dry yards	August 1-31 -- 60 per cent of job September 1-15 -- 40 per cent of job	100	11 1/2 hours per fresh ton**
Pears -- mostly Bartlett	Pruning	November -- 1/3 of acreage December -- 1/3 of acreage January -- 1/3 of acreage	100	0.25 acre
	Spraying	September -- 1 time on all acreage December -- 1 time on 1/2 of acreage January -- 1 time on 1/2 of acreage March -- 2 times on all acreage April -- 2 times on all acreage May -- 2 times on all acreage June -- 1 time on all acreage	50	2 acres
	Blight control	March -- about 25 per cent each month April -- about 25 per cent each month May -- about 25 per cent each month June -- about 25 per cent each month	50	Average about 20 hours per acre for season
	Picking	July 1-31 -- 60 per cent of crop August 1-31 -- 30 per cent of crop September 1-10 -- 10 per cent of crop	100	1,200 pounds (= 30 boxes)
Plums	Pruning -- 50 per cent of acreage	December -- 10 per cent of acreage January -- 40 per cent of acreage	50	0.5 acre

Table continued on next page.



No.	Date	Particulars	Debit	Credit
1	1890	Balance		100.00
2	1890	By Cash	50.00	
3	1890	To Cash		25.00
4	1890	By Cash	75.00	
5	1890	To Cash		10.00
6	1890	By Cash	30.00	
7	1890	To Cash		20.00
8	1890	By Cash	40.00	
9	1890	To Cash		15.00
10	1890	By Cash	60.00	
11	1890	To Cash		30.00
12	1890	By Cash	20.00	
13	1890	To Cash		10.00
14	1890	By Cash	50.00	
15	1890	To Cash		25.00
16	1890	By Cash	70.00	
17	1890	To Cash		15.00
18	1890	By Cash	35.00	
19	1890	To Cash		20.00
20	1890	By Cash	45.00	
21	1890	To Cash		10.00
22	1890	By Cash	65.00	
23	1890	To Cash		30.00
24	1890	By Cash	25.00	
25	1890	To Cash		15.00
26	1890	By Cash	55.00	
27	1890	To Cash		20.00
28	1890	By Cash	30.00	
29	1890	To Cash		10.00
30	1890	By Cash	40.00	
31	1890	To Cash		25.00
32	1890	By Cash	70.00	
33	1890	To Cash		15.00
34	1890	By Cash	35.00	
35	1890	To Cash		20.00
36	1890	By Cash	45.00	
37	1890	To Cash		10.00
38	1890	By Cash	65.00	
39	1890	To Cash		30.00
40	1890	By Cash	25.00	
41	1890	To Cash		15.00
42	1890	By Cash	55.00	
43	1890	To Cash		20.00
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45	1890	To Cash		10.00
46	1890	By Cash	40.00	
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48	1890	By Cash	70.00	
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51	1890	To Cash		20.00
52	1890	By Cash	45.00	
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265	1890	To Cash		15.00
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271	1890	To Cash		25.00
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275	1890	To Cash		20.00
276	1890	By Cash	45.00	
277	1890	To Cash		10.00
278	1890	By Cash	65.00	
279	1890	To Cash		30.00
280	1890	By Cash	25.00	
281	1890	To Cash		15.00
282	1890	By Cash	55.00	
283	1890	To Cash		20.00
284	1890	By Cash</		



Table 2 continued.

Crop	Operation	Time of need by months	Per cent of work done by seasonal help	Output per man-day
Plums (cont.)	Pruning (cont.)	February -- 40 per cent of acreage	100	0.33 acre
		March -- 10 per cent of acreage		
	Thinning	April 15-30 -- 50 per cent of acreage		
		May 1-15 -- 50 per cent of acreage		
	Picking	June -- 25 per cent of crop	100	700 pounds (= 25 crates)
		July 1-31 -- 60 per cent of crop		
	August 1- 15 per cent of crop			
Prunes	Pruning	December 1-31 -- 10 per cent of acreage	90	0.25 acre
		January 1-31 -- 40 per cent of acreage		
		February 1-28 -- 40 per cent of acreage		
		March 1-15 -- 10 per cent of acreage		
	Shaking trees	September 1-31 -- 90 per cent of crop	100	2.5 tons (green weight)
		October 1-10 -- 10 per cent of crop		
	Picking up	September 1-31 -- 90 per cent of crop	100	1 ton
		October 1-10 -- 10 per cent of crop		
	Dipping and drying -- by dehydrator	September 1-31 -- 90 per cent of crop	90	6 hours per green ton
		October 1-15 -- 10 per cent of crop		
	Sorting	September 1-31 -- 90 per cent of crop	90	5 tons
		October 1-15 -- 10 per cent of crop		
Walnuts	Knocking and picking up	September 20-30 -- 25 per cent of crop	100	200 pounds
		October 1-31 -- 75 per cent of crop		
	Hulling -- usually done by machine with regular help.			
Strawberries	Hoing -- first time ††	February -- 50 per cent of job	70	18 days per acre
		March -- 50 per cent of job		

Table continued on next page.



Date	Time	Description	Amount	Balance
1/1/20	10:00	Cash on hand	100.00	100.00
1/1/20	11:00	Cash on hand	100.00	100.00
1/1/20	12:00	Cash on hand	100.00	100.00
1/1/20	13:00	Cash on hand	100.00	100.00
1/1/20	14:00	Cash on hand	100.00	100.00
1/1/20	15:00	Cash on hand	100.00	100.00
1/1/20	16:00	Cash on hand	100.00	100.00
1/1/20	17:00	Cash on hand	100.00	100.00
1/1/20	18:00	Cash on hand	100.00	100.00
1/1/20	19:00	Cash on hand	100.00	100.00



Table 2 continued.

Crop	Operation	Time of need by months	Per cent of work done by seasonal help	Output per man-day
Strawberries (cont.)	Hoeing -- second time	March -- 50 per cent of job	70	18 days per acre
		April -- 50 per cent of job		
	Picking ††	May 1-31 -- 85 per cent of crop	70	15 crates of 12 baskets
		June 1-30 -- 12 per cent of crop		
Balance -- scattered and inconsequential.				

\*Use of power equipment in handling hay is increasing with consequent reduction in labor needs.

† Rice threshing sometimes continues into November or even December.

‡ Drying ratio on hops is about 4 to 1. Output per man-day in baling is about 12 bales with horse press and 22 bales with electric power press.

§ About 1,200 plants needed per acre.

¶ A small amount of almond hulling is done by hand, especially on smaller places, by which method workers do from 100 to 200 pounds per day depending on variety and condition of nuts.

|| Apricot thinning was inconsequential in 1935. In years of heavy set of fruit it may require 4 or 5 man-days per acre.

\*\*From Christie, A. W. and L. C. Barnard. The principles and practice of sun-drying fruit. California Agr. Exp. Sta. Bul. 388:40-60. 1925.

†† Hoeing of strawberries varies greatly in amount and depends largely upon rains. Must be hoed to break crust after each rain.

‡‡ Strawberries are picked to a limited extent in nearly all months of the year, but the need for seasonal labor is limited mainly to the rush season during May and early June. It probably requires an average of about 3 persons per acre for picking during the rush season of about 2 months and of these 70 per cent are seasonal.

Findings of Seasonal Labor Needs.-- Details and summaries of seasonal labor requirements of Sacramento County agriculture are presented as table 3. The "size of task" are figures drawn from table 1 in terms of either acreage or output in tons, crates, boxes, or whatever unit is commonly used. The "output per man-day" is an average figure for the entire acreage or output figured in crates, hampers, boxes, or other units as indicated in the table. If the work is of a nature that requires a crew, different members of which perform different tasks, then the average shown is per man based on the entire crew. Length of day is 9 hours, November to February; 10 hours, March to October, unless otherwise stated. Wide variations in output occur between farm and farm, field and field, and season and season, because of differences

Date	Time	Location	Weather	Remarks
10/10/1918	10:00 AM	Camp 10 miles N. of ...	Clear, 60° F.	Left camp at 10:00 AM. ...
10/11/1918	11:00 AM	Camp 12 miles N. of ...	Clear, 65° F.	Left camp at 11:00 AM. ...

The following is a summary of the observations made during the trip. The weather was generally clear and pleasant, with temperatures ranging from 60° to 65° F. The terrain was mostly flat, with some low hills in the distance. The vegetation was sparse, consisting mainly of grass and small shrubs. The water supply was adequate, and the animals appeared healthy. The trip was completed successfully, and the observations were recorded in detail.

On 10/10/1918, at 10:00 AM, we left camp 10 miles N. of ... The weather was clear, and the temperature was 60° F. We traveled at a steady pace, covering about 10 miles by 11:00 AM. The terrain was flat, and the vegetation was sparse. The water supply was adequate, and the animals appeared healthy. We arrived at camp 12 miles N. of ... at 11:00 AM. The weather was still clear, and the temperature had risen to 65° F. We set up camp and recorded our observations.

On 10/11/1918, at 11:00 AM, we left camp 12 miles N. of ... The weather was clear, and the temperature was 65° F. We traveled at a steady pace, covering about 10 miles by 12:00 PM. The terrain was flat, and the vegetation was sparse. The water supply was adequate, and the animals appeared healthy. We arrived at camp 22 miles N. of ... at 12:00 PM. The weather was still clear, and the temperature had risen to 70° F. We set up camp and recorded our observations.

The trip was completed successfully, and the observations were recorded in detail. The weather was generally clear and pleasant, with temperatures ranging from 60° to 70° F. The terrain was mostly flat, with some low hills in the distance. The vegetation was sparse, consisting mainly of grass and small shrubs. The water supply was adequate, and the animals appeared healthy. The trip was completed successfully, and the observations were recorded in detail.



in soil types, climatic conditions, weeds, yields, and other factors influencing the amount of work that a laborer can perform in a given day. Moreover, the basis of output is a mature, experienced male worker without reference to use of women, children, and more or less inexperienced help that is sometimes used in connection with certain of the tasks requiring use of seasonal workers. The column headed "available days" reflects (a) limitations set from the period within which the work must be performed because of the nature of the task, such as transplanting, thinning, weeding, and cutting, and (b) available days as determined by weather conditions, inclement weather reducing the number of days when a required task can be performed. The "required number of individuals" is given in terms of workers as noted above in connection with "output per man-day".

It is probable that the estimated number of workers required, as recorded in table 3, will often be too low, for the reason that "peaks" frequently occur, during which an unusually large proportion of the job is done in a very short period. This would naturally require a much greater number of workers than when the work is spread over a longer period, even though the total amount of labor (in man-days) remains the same.





TABLE 3

Seasonal Labor Needs -- Sacramento County -- by Months and Tasks  
(Excluding Delta Lands)

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number or workers*
January	Spinach: Hoeing	500 acres	0.75 acre	667	19	36
	Grapes: Pruning	4,412 acres†	0.33 acre	13,370	19	704
	Olives: Picking for oil	100 tons	400.0 pounds	500	19	27
	Peaches (clingstone): Pruning	363 acres†	0.25 acre	1,452	19	77
	Pears: Pruning	307 acres†	0.25 acre	1,228	19	65
	Spraying	230 acres†	2.0 acres	115	19	7
	Plums: Pruning	203 acres†	0.5 acre	406	19	22
	Prunes: Pruning	1,014 acres†	0.25 acre	4,056	19	214
	Totals			21,794	19	1,147 man-months
February	Peas: Hoeing	70 acres	0.66 acre	107	21	6
	Spinach: Hoeing	500 acres	0.75 acre	667	21	32
	Tomatoes: Transplanting (in beds)	3,168,000 plants ††	5,000.0 plants	634	10	64 (Feb. 15-28)
	Grapes: Pruning	4,412 acres†	0.33 acre	13,370	21	637
	Peaches (clingstone): Pruning	363 acres†	0.25 acre	1,452	21	70
	Plums: Pruning	203 acres†	0.5 acre	406	21	20
	Prunes: Pruning	1,014 acres†	0.25 acre	4,056	21	194
	Strawberries: Hoeing	402 acres†	1/18 acre	7,236	21	345
	Totals			27,928	21	1,330 man-months
March	Hops: Pruning, etc.	1,404 acres†	6	2,830	22	129
	Peas: Hoeing	70 acres	0.66 acre	107	22	5
	Spinach: Picking up and crating	2,250 tons	4.0 tons	563	11	52 (March 15-31)
	Tomatoes: Transplanting	3,168,000 plants ††	5,000.0 plants	634	11	58 (March 1-15)
	Grapes: Pruning	4,412 acres†	0.33 acre	13,370	22	608
	Hoeing and suckering	6,618 acres†	2.0 acres	3,309	22	151
	Peaches (clingstone): Pruning	155 acres†	0.25 acre	620	11	57 (March 1-15)
	Pears: Spraying	920 acres†	2.0 acres	460	22	21
	Blight control	920 acres†	4	230	22	11

Table continued on next page.

Name		Address		Occupation		Religion		Political Party		Social Status	
John Doe		123 Main St, New York, NY		Software Engineer		Protestant		Republican		Middle Class	
Jane Smith		456 Elm St, Los Angeles, CA		Marketing Executive		Catholic		Democrat		Upper Middle Class	
Robert Johnson		789 Oak St, Chicago, IL		Teacher		Jewish		Democrat		Lower Middle Class	
Emily White		101 Pine St, San Francisco, CA		Lawyer		Atheist		Democrat		Upper Class	
Michael Brown		202 Cedar St, Houston, TX		Business Owner		Muslim		Republican		Upper Middle Class	
Sophia Garcia		303 Birch St, Miami, FL		Artist		Hindu		Democrat		Middle Class	
Daniel Kim		404 Spruce St, Seattle, WA		Data Analyst		Buddhist		Democrat		Middle Class	
Olivia Lee		505 Willow St, Boston, MA		Journalist		Atheist		Democrat		Middle Class	
Noah Patel		606 Ash St, Phoenix, AZ		Software Engineer		Sikh		Republican		Middle Class	
Ava Nguyen		707 Hickory St, Dallas, TX		Marketing Executive		Catholic		Democrat		Middle Class	
Liam O'Connor		808 Maple St, San Diego, CA		Teacher		Protestant		Democrat		Lower Middle Class	
Mia Rodriguez		909 Elm St, New Orleans, LA		Dancer		Atheist		Democrat		Middle Class	
Ethan Davis		1010 Oak St, Portland, OR		Software Engineer		Atheist		Democrat		Middle Class	
Isabella Wilson		1111 Pine St, San Jose, CA		Marketing Executive		Catholic		Democrat		Upper Middle Class	
Jacob Miller		1212 Cedar St, Austin, TX		Teacher		Jewish		Democrat		Lower Middle Class	
Charlotte Brown		1313 Birch St, Denver, CO		Lawyer		Atheist		Democrat		Upper Class	
Benjamin Green		1414 Spruce St, San Antonio, TX		Business Owner		Muslim		Republican		Upper Middle Class	
Abigail Adams		1515 Willow St, Fort Worth, TX		Artist		Hindu		Democrat		Middle Class	
Lucas Taylor		1616 Ash St, San Jose, CA		Data Analyst		Buddhist		Democrat		Middle Class	
Hannah White		1717 Hickory St, New York, NY		Journalist		Atheist		Democrat		Middle Class	
Alexander King		1818 Maple St, Los Angeles, CA		Software Engineer		Sikh		Republican		Middle Class	
Evelyn Clark		1919 Elm St, Chicago, IL		Marketing Executive		Catholic		Democrat		Middle Class	
Nathan Lewis		2020 Oak St, Houston, TX		Teacher		Protestant		Democrat		Lower Middle Class	
Victoria Hall		2121 Pine St, San Francisco, CA		Lawyer		Atheist		Democrat		Upper Class	
Caleb Young		2222 Cedar St, Miami, FL		Business Owner		Muslim		Republican		Upper Middle Class	
Samantha King		2323 Birch St, Seattle, WA		Artist		Hindu		Democrat		Middle Class	
Isaac Wright		2424 Spruce St, Boston, MA		Data Analyst		Buddhist		Democrat		Middle Class	
Grace Lopez		2525 Willow St, Phoenix, AZ		Journalist		Atheist		Democrat		Middle Class	
Elijah Hill		2626 Ash St, Dallas, TX		Software Engineer		Sikh		Republican		Middle Class	
Lily Scott		2727 Hickory St, San Antonio, TX		Marketing Executive		Catholic		Democrat		Middle Class	
Carter Green		2828 Maple St, San Diego, CA		Teacher		Protestant		Democrat		Lower Middle Class	
Natalie Baker		2929 Elm St, New Orleans, LA		Lawyer		Atheist		Democrat		Upper Class	
Jesse Adams		3030 Oak St, Portland, OR		Business Owner		Muslim		Republican		Upper Middle Class	
Zoe Nelson		3131 Pine St, San Jose, CA		Artist		Hindu		Democrat		Middle Class	
Wyatt Carter		3232 Cedar St, Austin, TX		Data Analyst		Buddhist		Democrat		Middle Class	
Ariana Evans		3333 Birch St, New York, NY		Journalist		Atheist		Democrat		Middle Class	
Grayson King		3434 Spruce St, Los Angeles, CA		Software Engineer		Sikh		Republican		Middle Class	
Skylar Green		3535 Willow St, Chicago, IL		Marketing Executive		Catholic		Democrat		Middle Class	
Dylan White		3636 Ash St, Houston, TX		Teacher		Protestant		Democrat		Lower Middle Class	
Kaitlyn Hall		3737 Maple St, San Francisco, CA		Lawyer		Atheist		Democrat		Upper Class	
Jaxon Young		3838 Elm St, Miami, FL		Business Owner		Muslim		Republican		Upper Middle Class	
Gabriella King		3939 Oak St, Seattle, WA		Artist		Hindu		Democrat		Middle Class	
Mason Wright		4040 Pine St, Boston, MA		Data Analyst		Buddhist		Democrat		Middle Class	
Lyla Lopez		4141 Cedar St, Phoenix, AZ		Journalist		Atheist		Democrat		Middle Class	
Caleb Hill		4242 Birch St, Dallas, TX		Software Engineer		Sikh		Republican		Middle Class	
Ariana Scott		4343 Spruce St, San Antonio, TX		Marketing Executive		Catholic		Democrat		Middle Class	
Grayson Green		4444 Willow St, San Diego, CA		Teacher		Protestant		Democrat		Lower Middle Class	
Natalie Baker		4545 Elm St, New Orleans, LA		Lawyer		Atheist		Democrat		Upper Class	
Jesse Adams		4646 Oak St, Portland, OR		Business Owner		Muslim		Republican		Upper Middle Class	
Zoe Nelson		4747 Pine St, San Jose, CA		Artist		Hindu		Democrat		Middle Class	
Wyatt Carter		4848 Cedar St, Austin, TX		Data Analyst		Buddhist		Democrat		Middle Class	
Ariana Evans		4949 Birch St, New York, NY		Journalist		Atheist		Democrat		Middle Class	
Grayson King		5050 Spruce St, Los Angeles, CA		Software Engineer		Sikh		Republican		Middle Class	
Skylar Green		5151 Willow St, Chicago, IL		Marketing Executive		Catholic		Democrat		Middle Class	
Dylan White		5252 Ash St, Houston, TX		Teacher		Protestant		Democrat		Lower Middle Class	
Kaitlyn Hall		5353 Maple St, San Francisco, CA		Lawyer		Atheist		Democrat		Upper Class	
Jaxon Young		5454 Elm St, Miami, FL		Business Owner		Muslim		Republican		Upper Middle Class	
Gabriella King		5555 Oak St, Seattle, WA		Artist		Hindu		Democrat		Middle Class	
Mason Wright		5656 Pine St, Boston, MA		Data Analyst		Buddhist		Democrat		Middle Class	
Lyla Lopez		5757 Cedar St, Phoenix, AZ		Journalist		Atheist		Democrat		Middle Class	
Caleb Hill		5858 Birch St, Dallas, TX		Software Engineer		Sikh		Republican		Middle Class	
Ariana Scott		5959 Spruce St, San Antonio, TX		Marketing Executive		Catholic		Democrat		Middle Class	
Grayson Green		6060 Willow St, San Diego, CA		Teacher		Protestant		Democrat		Lower Middle Class	
Natalie Baker		6161 Elm St, New Orleans, LA		Lawyer		Atheist		Democrat		Upper Class	
Jesse Adams		6262 Oak St, Portland, OR		Business Owner		Muslim		Republican		Upper Middle Class	
Zoe Nelson		6363 Pine St, San Jose, CA		Artist		Hindu		Democrat		Middle Class	
Wyatt Carter		6464 Cedar St, Austin, TX		Data Analyst		Buddhist		Democrat		Middle Class	
Ariana Evans		6565 Birch St, New York, NY		Journalist		Atheist		Democrat		Middle Class	
Grayson King		6666 Spruce St, Los Angeles, CA		Software Engineer		Sikh		Republican		Middle Class	
Skylar Green		6767 Willow St, Chicago, IL		Marketing Executive		Catholic		Democrat		Middle Class	
Dylan White		6868 Ash St, Houston, TX		Teacher		Protestant		Democrat		Lower Middle Class	
Kaitlyn Hall		6969 Maple St, San Francisco, CA		Lawyer		Atheist		Democrat		Upper Class	
Jaxon Young		7070 Elm St, Miami, FL		Business Owner		Muslim		Republican		Upper Middle Class	
Gabriella King		7171 Oak St, Seattle, WA		Artist		Hindu		Democrat		Middle Class	
Mason Wright		7272 Pine St, Boston, MA		Data Analyst		Buddhist		Democrat		Middle Class	



Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers *
March (cont.)	Plums: Pruning	50 acres †	0.5 acre	100	22	5
	Prunes: Pruning	253 acres †	0.25 acre	1,012	22	46
	Strawberries: Hoeing	805 acres †	1/18 acre	14,490	22	659
	Totals			37,725	22	1,715 man-months
April	Alfalfa: Mowing with teams	1,250 acres †	7.5 acres	167	12	14 (April 15-30)
	Mowing with tractors	1,250 acres †	20.0 acres	63	12	6 (April 15-30)
	Raking	2,500 acres †	15.0 acres	167	12	14 (April 15-30)
	Shocking	2,500 acres †	30.0 acres	84	12	7 (April 15-30)
	Hops: Pruning, etc.	1,404 acres †	6	5,661	23	247
	Spinach: Picking up and crating	2,500 tons	4.0 tons	625	11	57 (April 1-15)
	Tomatoes: Planting by hand	688 acres	0.75 acre	918	12	77 (April 15-30)
	Planting by machine	688 acres	2.0 acres	344	12	29 (April 15-30)
	Grapes: Hoeing and suckering	6,618 acres †	0.33 acre	20,055	23	872
	Pears: Spraying	920 acres †	2.0 acres	460	23	20
	Blight control	920 acres †	4	230	23	10
	Plums: Thinning	1,014 acres	0.33 acre	3,073	12	257 (April 15-30)
	Strawberries: Hoeing	403 acres †	1/18 acre	7,257	23	316
	Totals			39,104	23	1,701 man-months
May	Alfalfa: Mowing with teams	2,500 acres †	7.5 acres	334	25	14
	Mowing with tractors	2,500 acres †	20.0 acres	125	25	5
	Raking	5,000 acres †	15.0 acres	334	25	14
	Shocking	5,000 acres †	30.0 acres	167	25	7
	Stacking	4,167 tons †	10.0 tons	417	25	17
	Baling	7,500 tons †	8.0 tons	938	25	38
	Hay (other than alfalfa): Mowing	6,750 acres †	7.5 acres	900	25	36
	Raking	6,750 acres †	15.0 acres	450	25	18
	Shocking	6,750 acres †	30.0 acres	225	25	9

Table continued on next page.

Item	Quantity	Unit	Value	Remarks
1. 1000 lbs. of No. 10 wire	1000	lbs.	10.00	
2. 500 lbs. of No. 12 wire	500	lbs.	5.00	
3. 250 lbs. of No. 14 wire	250	lbs.	2.50	
4. 100 lbs. of No. 16 wire	100	lbs.	1.00	
5. 50 lbs. of No. 18 wire	50	lbs.	.50	
6. 25 lbs. of No. 20 wire	25	lbs.	.25	
7. 10 lbs. of No. 22 wire	10	lbs.	.10	
8. 5 lbs. of No. 24 wire	5	lbs.	.05	
9. 2 lbs. of No. 26 wire	2	lbs.	.02	
10. 1 lb. of No. 28 wire	1	lb.	.01	
11. 1000 lbs. of No. 10 wire	1000	lbs.	10.00	
12. 500 lbs. of No. 12 wire	500	lbs.	5.00	
13. 250 lbs. of No. 14 wire	250	lbs.	2.50	
14. 100 lbs. of No. 16 wire	100	lbs.	1.00	
15. 50 lbs. of No. 18 wire	50	lbs.	.50	
16. 25 lbs. of No. 20 wire	25	lbs.	.25	
17. 10 lbs. of No. 22 wire	10	lbs.	.10	
18. 5 lbs. of No. 24 wire	5	lbs.	.05	
19. 2 lbs. of No. 26 wire	2	lbs.	.02	
20. 1 lb. of No. 28 wire	1	lb.	.01	



Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
May (cont.)	Hops: Training vines -- 2 times on all acreage	2,807 acres†	0.5 acre	5,614	20	281 (May 7-31)
	Peas: Picking	21,000 hampers	10.0 hampers	2,100	17	124 (May 10-31)
	Tomatoes: Planting by hand	2,062 acres	0.75 acre	2,750	12	230 (May 1-15)
	Planting by machine	2,062 acres	2.0 acres	1,031	12	86 (May 1-15)
	Replanting	550 acres	4.0 acres	138	25	6
	Hoeing	2,750 acres	1.0 acre	2,750	9	306 (May 20-31)
	Cherries (canning varieties): Picking	60 tons	200.0 pounds	600	6	100 (May 24-31)
	Cherries (shipping varieties): Picking	120 tons	180.0 pounds	1,334	25	54
	Packing	120 tons	225.0 pounds	1,091	25	44
	Grapes: Sulphuring	14,707 acres	//	2,451	25	98
	Peaches (clingstone): Thinning	1,035 acres	2.0 acres	518	25	21
	Pears: Spraying	920 acres†	2.0 acres	460	25	19
	Blight control	920 acres†	¶	230	25	10
	Plums: Thinning	1,015 acres	0.33 acre	3,076	12	257 (May 1-15)
	Strawberries: Picking	476,000 crates	15.0 crates	31,734	25	1,270
	Totals			59,767	25	2,391 man-months
June	Alfalfa: Mowing with teams	2,500 acres†	7.5 acres	334	26	13
	Mowing with tractors	2,500 acres†	20.0 acres	125	26	5
	Raking	5,000 acres†	15.0 acres	334	26	13
	Shocking	5,000 acres†	30.0 acres	167	26	7
	Stacking	4,167 tons†	10.0 tons	417	26	17
	Baling	7,500 tons†	8.0 tons	938	26	37
	Grain: Harvesting with combine	18,000 acres†	7.0 acres	2,572	26	99
	Hops: Training vines	1,404 acres	0.5 acre	2,808	13	217 (June 1-15)
	Tomatoes: Hoeing	8,250 acres	1.0 acre	8,250	26	318
	Apricots: Picking	179 tons	1,000.0 pounds	358	13	28 (June 15-30)
	Cutting for drying	52 tons	600.0 pounds	174	13	14 (June 15-30)
	Other dry-yard labor	45 tons	**	50	13	4 (June 15-30)
	Cherries (canning varieties): Picking	60 tons	200.0 pounds	600	6	100 (June 1-7)

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Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
June (cont.)	Cherries (shipping varieties):					
	Picking	30 tons	180.0 pounds	334	6	56 (June 1-7)
	Packing	30 tons	225.0 pounds	273	6	46 (June 1-7)
	Grapes: Sulphuring	14,707 acres	//	2,451	26	95
	Peaches (clingstone):					
	Thinning	1,036 acres	2.0 acres	518	13	40 (June 15-30)
	Pears: Spraying	460 acres	2.0 acres	230	26	9
	Blight control	920 acres	☞	230	26	9
	Plums: Picking	354 tons	700.0 pounds	1,012	26	39
July	Strawberries: Picking	67,200 crates†	15.0 crates	4,480	26	173
	Total			26,655	26	1,026 man-months
	Alfalfa: Mowing with teams	2,500 acres†	7.5 acres	334	26	13
	Mowing with tractor	2,500 acres†	20.0 acres	125	26	5
	Raking	5,000 acres†	15.0 acres	334	26	13
	Shocking	5,000 acres†	30.0 acres	167	26	7
	Stacking	4,167 tons†	10.0 tons	417	26	17
	Baling	7,500 tons†	8.0 tons	938	26	37
	Beans: Hoeing	5,000 acres	2.0 acres	2,500	26	97
	Grain: Harvesting with combine	18,000 acres†	7.0 acres	2,572	26	99
	Tomatoes: Picking for shipment	6,320 lugs	45.0 lugs	141	26	6
	Apricots: Picking	76 tons	1,000.0 pounds	152	13	12 (July 1-15)
	Cutting for drying	23 tons	600.0 pounds	77	13	6 (July 1-15)
	Other dry-yard labor	30 tons	**	34	17	2 (July 1-20)
	Figs (other than Kadota):					
	Picking	1,200 crates	15.0 crates	80	26	4
	Grapes: Sulphuring	14,707 acres	//	2,451	26	95
	Pears: Picking	2,760 tons	1,200.0 pounds	4,600	26	177
	Plums: Picking	849 tons	700.0 pounds	2,426	26	94
	Totals			17,348	26	668 man-months
August	Alfalfa: Mowing with teams	2,500 acres†	7.5 acres	334	26	13
	Mowing with tractor	2,500 acres†	20.0 acres	125	26	5
	Raking	5,000 acres†	15.0 acres	334	26	13
	Shocking	5,000 acres†	30.0 acres	167	26	7
	Stacking	4,167 tons†	10.0 tons	417	26	17
	Baling	7,500 tons	8.0 tons	938	26	37

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Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
August (cont.)	Hops: Picking	6,632 tons ††	200.0 pounds ††	66,320	20	3,316 (August 7-31)
	Drying	3,316 tons ††	2,800.0 pounds ††	2,369	20	119 (August 7-31)
	Tomatoes: Picking for canning	8,160 tons	1.0 ton	8,160	13	628 (August 15-31)
	Picking for shipment	8,952 lugs	45.0 lugs	155	26	6
	Almonds: Knocking	542 acres	0.25 acre	2,168	18	121 (August 10-31)
	Hulling by machine	67 tons †	400.0 pounds	335	18	19 (August 10-31)
	Grapes: Picking and packing in field for shipment	25,886 lugs	12.0 lugs	2,158	6	360 (August 24-31)
	Peaches (clingstone): Picking	2,595 tons	1.0 ton	2,595	26	100
	Cutting for drying	51 tons	600.0 pounds	170	26	7
	Other dry-yard labor	51 tons	**	59	26	3
	Pears: Picking	1,380 tons	1,200.0 pounds	2,300	26	89
	Plums: Picking	212 tons	700.0 pounds	606	26	24
	Totals			89,710	26	3,451 man-months
September	Alfalfa: Mowing with teams	2,500 acres †	7.5 acres	334	26	13
	Mowing with tractors	2,500 acres †	20.0 acres	125	26	5
	Raking	5,000 acres †	15.0 acres	334	26	13
	Shocking	5,000 acres †	30.0 acres	167	26	7
	Stacking †	4,167 tons	10.0 tons	417	26	17
	Baling	7,500 tons	8.0 tons	938	26	37
	Beans: Piling	7,000 acres	1.0 acre	7,000	26	270
	Threshing by "pick-up"	750 acres †	4.0 acres	188	26	8
	Rice: Cutting with swather	472 acres †	10.0 acres	48	13	4 (September 15-30)
	Threshing with "pick-up"	283 acres †	4.6 acres	62	13	5 (September 15-30)
	Picking up sacks and hauling from field	22,693 sacks	500.0 sacks	46	13	4 (September 15-30)
	Hops: Baling	10,473 bales †	15 bales	699	6	117 (September 1-7)
	Tomatoes: Picking for canning	16,320 tons	1.0 ton	16,320	26	629
	Picking for shipment	1,264 lugs	45.0 lugs	29	26	2
	Almonds: Knocking	1,517 acres	0.25 acre	6,068	26	234
	Hulling by machine	190 tons †	400.0 pounds	950	26	37
	Figs (other than Kadota): Picking	3,600 crates	15.0 acres	240	26	10
	Grapes: Picking and packing in field for shipment	517,725 lugs	12.0 lugs	43,144	13	3,319 (September 15-30)
	Picking for wineries and drying	4,500 tons	1.5 tons	3,000	13	231 (September 15-30)

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NAME	RANK	COMPANY	REGIMENT	BATTALION	COMPANY	REMARKS
J. H. BROWN	Private	1st Infantry	1st	1st	A	Discharged
W. L. GREEN	Private	1st Infantry	1st	1st	A	Discharged
T. M. WHITE	Private	1st Infantry	1st	1st	A	Discharged
J. K. BLACK	Private	1st Infantry	1st	1st	A	Discharged
R. S. GRAY	Private	1st Infantry	1st	1st	A	Discharged
L. P. HARRIS	Private	1st Infantry	1st	1st	A	Discharged
M. A. JONES	Private	1st Infantry	1st	1st	A	Discharged
D. E. SMITH	Private	1st Infantry	1st	1st	A	Discharged
C. F. WILSON	Private	1st Infantry	1st	1st	A	Discharged
H. G. BAKER	Private	1st Infantry	1st	1st	A	Discharged
K. L. MILLER	Private	1st Infantry	1st	1st	A	Discharged
N. O. DAVIS	Private	1st Infantry	1st	1st	A	Discharged
P. Q. GARCIA	Private	1st Infantry	1st	1st	A	Discharged
Q. R. HENRY	Private	1st Infantry	1st	1st	A	Discharged
R. T. ILLIUM	Private	1st Infantry	1st	1st	A	Discharged
S. U. JACKSON	Private	1st Infantry	1st	1st	A	Discharged
T. V. KELLEY	Private	1st Infantry	1st	1st	A	Discharged
U. W. LAMAR	Private	1st Infantry	1st	1st	A	Discharged
V. X. MANN	Private	1st Infantry	1st	1st	A	Discharged
W. Y. NELSON	Private	1st Infantry	1st	1st	A	Discharged
X. Z. OLIVER	Private	1st Infantry	1st	1st	A	Discharged
Y. A. PETERSON	Private	1st Infantry	1st	1st	A	Discharged
Z. B. QUINN	Private	1st Infantry	1st	1st	A	Discharged
A. C. REED	Private	1st Infantry	1st	1st	A	Discharged
B. D. STEVENSON	Private	1st Infantry	1st	1st	A	Discharged
C. E. TAYLOR	Private	1st Infantry	1st	1st	A	Discharged
D. F. WATSON	Private	1st Infantry	1st	1st	A	Discharged
E. G. YOUNG	Private	1st Infantry	1st	1st	A	Discharged
F. H. ZIMMERMAN	Private	1st Infantry	1st	1st	A	Discharged
G. I. ALLEN	Private	1st Infantry	1st	1st	A	Discharged
H. J. BARNES	Private	1st Infantry	1st	1st	A	Discharged
I. K. COLE	Private	1st Infantry	1st	1st	A	Discharged
J. L. DICKSON	Private	1st Infantry	1st	1st	A	Discharged
K. M. EVANS	Private	1st Infantry	1st	1st	A	Discharged
L. N. FOSTER	Private	1st Infantry	1st	1st	A	Discharged
M. O. GIBSON	Private	1st Infantry	1st	1st	A	Discharged
N. P. HARRIS	Private	1st Infantry	1st	1st	A	Discharged
O. Q. JONES	Private	1st Infantry	1st	1st	A	Discharged
P. R. KELLEY	Private	1st Infantry	1st	1st	A	Discharged
Q. S. LAMAR	Private	1st Infantry	1st	1st	A	Discharged
R. T. MANN	Private	1st Infantry	1st	1st	A	Discharged
S. U. NELSON	Private	1st Infantry	1st	1st	A	Discharged
T. V. OLIVER	Private	1st Infantry	1st	1st	A	Discharged
U. W. PETERSON	Private	1st Infantry	1st	1st	A	Discharged



Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
September (cont.)	Peaches (clingstone): Picking	1,730 tons	1.0 ton	1,730	9	193 (September 1-10)
	Cutting for drying	34 tons	600.0 pounds	114	9	13 (September 1-10)
	Other dry-yard labor	34 tons	**	40	13	4 (September 1-15)
	Pears: Spraying	460 acres†	2.0 acres	230	26	9
	Picking	460 tons	1,200.0 pounds	767	9	86 (September 1-10)
	Prunes: Shaking trees	5,670 tons††	2.5 tons††	2,268	26	88
	Picking up	5,670 tons††	1.0 ton ††	5,670	26	219
	Dipping and drying by dehydrator	5,670 tons†-††	**	3,396	26	131
	Sorting	2,520 tons†	5.0 tons	504	26	20
	Walnuts: Knocking and picking up	98,312 pounds	200.0 pounds	492	9	55 (September 20-30)
	Totals			95,320	26	3,667 man-months
October	Alfalfa: Mowing with teams	1,250 acres†	7.5 acres	167	12	14 (October 1-15)
	Mowing with tractors	1,250 acres†	20.0 acres	63	12	6 (October 1-15)
	Raking	2,500 acres†	15.0 acres	167	12	14 (October 1-15)
	Shocking	2,500 acres†	30.0 acres	84	12	7 (October 1-15)
	Stacking	4,167 tons†	10.0 tons	417	24	18
	Baling	7,500 tons	8.0 tons	938	24	40
	Beans: Piling	3,000 acres	1.0 acre	3,000	24	125
	Threshing by "pick-up"	3,750 acres†	4.0 acres	938	24	40
	Rice: Cutting with swather	944 acres†	10.0 acres	95	24	4
	Threshing with "pick-up"	1,133 acres†	4.6 acres	247	24	11
	Picking up sacks and hauling from field	90,771 sacks	500.0 sacks	182	24	8
	Tomatoes: Picking for canning	16,321 tons	1.0 ton	16,320	24	680
	Picking for shipment	47,400 lugs	45.0 lugs	1,054	24	44
	Almonds: Knocking	108 acres	0.25 acre	432	8	54 (October 1-10)
	Hulling by machine	14 tons†	400.0 pounds	70	8	9 (October 1-10)
	Figs (other than Kadota): Picking	2,400 crates	15.0 crates	160	24	7
	Grapes: Picking and packing in field for shipment	310,635 lugs	12.0 lugs	25,887	24	1,079
	Picking for wineries and drying	6,000 tons	1.5 tons	4,000	24	167
	Olives: Picking for pickling	58 tons	275.0 pounds	558	12	47 (October 15-31)

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
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301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400
401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500
501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600
601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700
701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800
801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900
901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000



Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
October (cont.)	Prunes: Shaking trees	630 tons <sup>††</sup>	2.5 tons <sup>††</sup>	252	8	32 (October 1-10)
	Picking up	630 tons <sup>††</sup>	1.0 ton <sup>††</sup>	630	8	79 (October 1-10)
	Dipping and drying by dehydrator	630 tons <sup>†††</sup>	**	378	12	32 (October 1-15)
	Sorting	280 tons <sup>†</sup>	5.0 tons	56	12	5 (October 1-15)
	Walnuts: Knocking and picking up	294,938 pounds	200.0 pounds	1,475	24	62
	Totals			57,570	24	2,399 man-months
November	Beans: Threshing by "pick-up"	500 acres <sup>†</sup>	4.0 acres	125	24	6
	Apricots: Pruning	385 acres	0.25 acre	1,540	24	65
	Grapes: Picking and packing in field for shipment	8,629 lugs	12.0 lugs	720	12	60 (November 1-15)
	Picking for wineries and drying	4,500 tons	1.5 tons	3,000	24	125
	Olives: Picking for pickling	117 tons	275.0 pounds	1,125	24	47
	Pears: Pruning	306 acres	0.25 acre	1,224	24	51
December	Totals			7,734	24	310 man-months
	Apricots: Pruning	128 acres	0.25 acre	512	18	29
	Olives: Picking for oil	100 tons	0.2 ton	500	18	28
	Peaches (clingstone): Pruning	155 acres <sup>†</sup>	0.25 acre	620	18	35
	Pears: Pruning	307 acres	0.25 acre	1,228	18	69
	Spraying	230 acres <sup>†</sup>	2.0 acres	115	18	7
	Plums: Pruning	51 acres <sup>†</sup>	0.5 acre	102	18	6
	Prunes: Pruning	253 acres <sup>†</sup>	0.25 acre	1,012	18	57
	Totals			4,089	18	228 man-months

\*On a monthly basis unless otherwise noted.

<sup>†</sup> Estimated portion of job done by seasonal workers.

<sup>††</sup> Twenty per cent added to allow for replanting needs.

<sup>†††</sup> Hop pruning, stringing, etc., estimated to require a total of 6 man-days per acre, one-third of the job in March and two-thirds in April.

<sup>¶</sup> Blight control on pears varies greatly. Averaged about 20 man-hours per acre in 1935.

# UNITED STATES DEPARTMENT OF AGRICULTURE

Report on the results of the investigation of the effects of the various factors influencing the growth and development of the cotton plant, conducted by the Bureau of Plant Industry, during the years 1911 and 1912.

By H. H. HARRIS, Chief of Bureau of Plant Industry.

Washington, D. C., 1913.

1	Alabama 44	10	100	1000	100
2	Alabama 45	10	100	1000	100
3	Alabama 46	10	100	1000	100
4	Alabama 47	10	100	1000	100
5	Alabama 48	10	100	1000	100
6	Alabama 49	10	100	1000	100
7	Alabama 50	10	100	1000	100
8	Alabama 51	10	100	1000	100
9	Alabama 52	10	100	1000	100
10	Alabama 53	10	100	1000	100
11	Alabama 54	10	100	1000	100
12	Alabama 55	10	100	1000	100
13	Alabama 56	10	100	1000	100
14	Alabama 57	10	100	1000	100
15	Alabama 58	10	100	1000	100
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17	Alabama 60	10	100	1000	100
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19	Alabama 62	10	100	1000	100
20	Alabama 63	10	100	1000	100
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24	Alabama 67	10	100	1000	100
25	Alabama 68	10	100	1000	100
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27	Alabama 70	10	100	1000	100
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36	Alabama 79	10	100	1000	100
37	Alabama 80	10	100	1000	100
38	Alabama 81	10	100	1000	100
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57	Alabama 100	10	100	1000	100
58	Alabama 101	10	100	1000	100
59	Alabama 102	10	100	1000	100
60	Alabama 103	10	100	1000	100
61	Alabama 104	10	100	1000	100
62	Alabama 105	10	100	1000	100
63	Alabama 106	10	100	1000	100
64	Alabama 107	10	100	1000	100
65	Alabama 108	10	100	1000	100
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69	Alabama 112	10	100	1000	100
70	Alabama 113	10	100	1000	100
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73	Alabama 116	10	100	1000	100
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120	Alabama 163	10	100	1000	100
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123	Alabama 166	10	100	1000	100
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135	Alabama 178	10	100	1000	100
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141	Alabama 184	10	100	1000	100
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143	Alabama 186	10	100	1000	100
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146	Alabama 189	10	100	1000	100
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163	Alabama 206	10	100	1000	100
164	Alabama 207	10	100	1000	100
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166	Alabama 209	10	100	1000	100
167	Alabama 210	10	100	1000	100
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169	Alabama 212	10	100	1000	100
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196	Alabama 239	10	100	1000	100
197	Alabama 240	10	100	1000	100
198	Alabama 241	10	100	1000	100
199	Alabama 242	10	100	1000	100
20					



// Grapes are sulfured several times, requiring a total of about one-half man-day of labor per acre for the season.

\*\*Dry-yard labor, other than cutting, estimated to be as follows:

Apricots -- 11 man-hours per fresh ton.  
Peaches -- 11.5 man-hours per fresh ton.  
Prunes -- 6.0 man-hours per fresh ton.

†† Green weight.





TABLE 4

Summary of Seasonal Labor Needs by Months  
 Sacramento County  
 (Excluding Delta Lands)  
 1935

Month	Required man-days of seasonal labor	Available work days	Required man-months of seasonal labor
January	21,794	19	1,147
February	27,928	21	1,330
March	37,725	22	1,715
April	39,104	23	1,701
May	59,767	25	2,391
June	26,655	26	1,026
July	17,348	26	668
August	89,710	26	3,451
September	95,320	26	3,667
October	57,570	24	2,399
November	7,734	24	310
December	4,089	18	228
Total	484,744	--	20,033

Statement of the Receipts and Disbursements of the			
Treasury of the United States for the			
Year ending			
Receipts	Disbursements	Balance	Total
1871	10	10	20
1872	10	10	20
1873	10	10	20
1874	10	10	20
1875	10	10	20
1876	10	10	20
1877	10	10	20
1878	10	10	20
1879	10	10	20
1880	10	10	20
1881	10	10	20
1882	10	10	20
1883	10	10	20
1884	10	10	20
1885	10	10	20
1886	10	10	20
1887	10	10	20
1888	10	10	20
1889	10	10	20
1890	10	10	20
1891	10	10	20
1892	10	10	20
1893	10	10	20
1894	10	10	20
1895	10	10	20
1896	10	10	20
1897	10	10	20
1898	10	10	20
1899	10	10	20
1900	10	10	20
1901	10	10	20
1902	10	10	20
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1904	10	10	20
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1906	10	10	20
1907	10	10	20
1908	10	10	20
1909	10	10	20
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1912	10	10	20
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1914	10	10	20
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1916	10	10	20
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1918	10	10	20
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1922	10	10	20
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1958	10	10	20
1959	10	10	20
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1962	10	10	20
1963	10	10	20
1964	10	10	20
1965	10	10	20
1966	10	10	20
1967	10	10	20
1968	10	10	20
1969	10	10	20
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1971	10	10	20
1972	10	10	20
1973	10	10	20
1974	10	10	20
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1976	10	10	20
1977	10	10	20
1978	10	10	20
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2016	10	10	20
2017	10	10	20
2018	10	10	20
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2022	10	10	20
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2028	10	10	20
2029	10	10	20
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2032	10	10	20
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2035	10	10	20
2036	10	10	20
2037	10	10	20
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2076	10	10	20
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2093	10	10	20
2094	10	10	20
2095	10	10	20
2096	10	10	20
2097	10	10	20
2098	10	10	20
2099	10	10	20
2100	10	10	20



## Notes

Notes on Table 2.-- Data concerning "time of need" as shown in this table break down required seasonal labor into the periods when the work is performed in order to permit a subsequent determination of labor needs by months (table 3). Some operations are performed only to a limited extent by seasonal workers. For example, only about 50 per cent of the work in harvesting alfalfa hay is estimated to have been done by seasonal laborers. This having been done over a period of **several months**, a portion was assigned to each.

The amount of work done each month is based on the cropping system followed in 1935. The allotting of amounts of work is based on findings concerning local farm practices, and required time to "make" a crop resulting from inquiry of producers, and records of carlot shipments, the latter proving helpful in fixing dates of planting and of subsequent tasks involved in producing certain crops. Proportionate amounts of output harvested each month were determined from data of local practices with respect to harvesting, and from carlot shipments of perishable products. Records of truck shipments were also used when available.

Notes on Table 3.-- Table 3 is the condensed summary of labor needs as worked out for Sacramento County as a result of findings pertinent to 1935. The data are presented by months with the tasks which were performed in each month indicated by both crop and task. The size of the job was calculated from the data appearing in table 1 (acreage and production) and table 2 (task, time of performance, and percentage of work pertinent to a given month). The output per man-day was calculated as indicated in the foreword presenting table 3. The number of required man-days is a result of dividing the size of task by output per man-day. The available days for the different tasks involve two variables. The first is **the** number of days when field work is possible because of favorable weather conditions. The basis for this column was determined from a study of the monthly weather charts of the United States Weather Bureau for the years 1933, 1934, and 1935. These data indicated available days per month as follows (based on a 26-day working month without allowance for holidays):

Month	Available days	Length of work day	Month	Available days	Length of work day
		<u>hours</u>			<u>hours</u>
January	19	9	July	26	10
February	21	9	August	26	10
March	22	10	September	26	10
April	23	10	October	24	10
May	25	10	November	24	9
June	26	10	December	18	9

Source of data: Based on precipitation records of the Sacramento station of the United States Weather Bureau for the years 1933, 1934, and 1935.

The second factor influencing the number of available days was the size of the job. If the output was small in amount, then the number of days was limited to the time needed to get out this amount efficiently. If a field operation had to be performed in a period less than the number of available days in the month, then the specific number of days was noted. These restrictions are shown in parentheses. For example, in June picking of cherries was limited to the first week, apricot picking to 13 days in the last half of the month, etc.

DATE	DESCRIPTION	AMOUNT	CHECK NO.	BANK	INITIALS
1/1/50	...	...	...	...	...
1/2/50	...	...	...	...	...
1/3/50	...	...	...	...	...
1/4/50	...	...	...	...	...
1/5/50	...	...	...	...	...
1/6/50	...	...	...	...	...
1/7/50	...	...	...	...	...
1/8/50	...	...	...	...	...
1/9/50	...	...	...	...	...
1/10/50	...	...	...	...	...
1/11/50	...	...	...	...	...
1/12/50	...	...	...	...	...
1/13/50	...	...	...	...	...
1/14/50	...	...	...	...	...
1/15/50	...	...	...	...	...
1/16/50	...	...	...	...	...
1/17/50	...	...	...	...	...
1/18/50	...	...	...	...	...
1/19/50	...	...	...	...	...
1/20/50	...	...	...	...	...
1/21/50	...	...	...	...	...
1/22/50	...	...	...	...	...
1/23/50	...	...	...	...	...
1/24/50	...	...	...	...	...
1/25/50	...	...	...	...	...
1/26/50	...	...	...	...	...
1/27/50	...	...	...	...	...
1/28/50	...	...	...	...	...
1/29/50	...	...	...	...	...
1/30/50	...	...	...	...	...
1/31/50	...	...	...	...	...



The totals of table 3 show the total required man-days of needed seasonal labor, the available days for field work during the month, and the necessary number of men (as defined in the opening paragraph of table 3) required on a monthly basis to care for the tasks ordinarily performed by seasonal workers.

In an area such as Sacramento County, involving a substantial acreage of field and truck crops, the findings as set forth in this report are bound to fluctuate materially from year to year because of the influence of the market outlook upon what and how much acreage is planted, and when it is planted; because of variable seasonal conditions affecting yields, times of performing operations, and available days, and because of harvesting operations on certain crops being speeded up to supply a good market or retarded to avoid a poor one, resulting in marked variations in the need for harvest labor.



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